



Aug. 31. Dr.

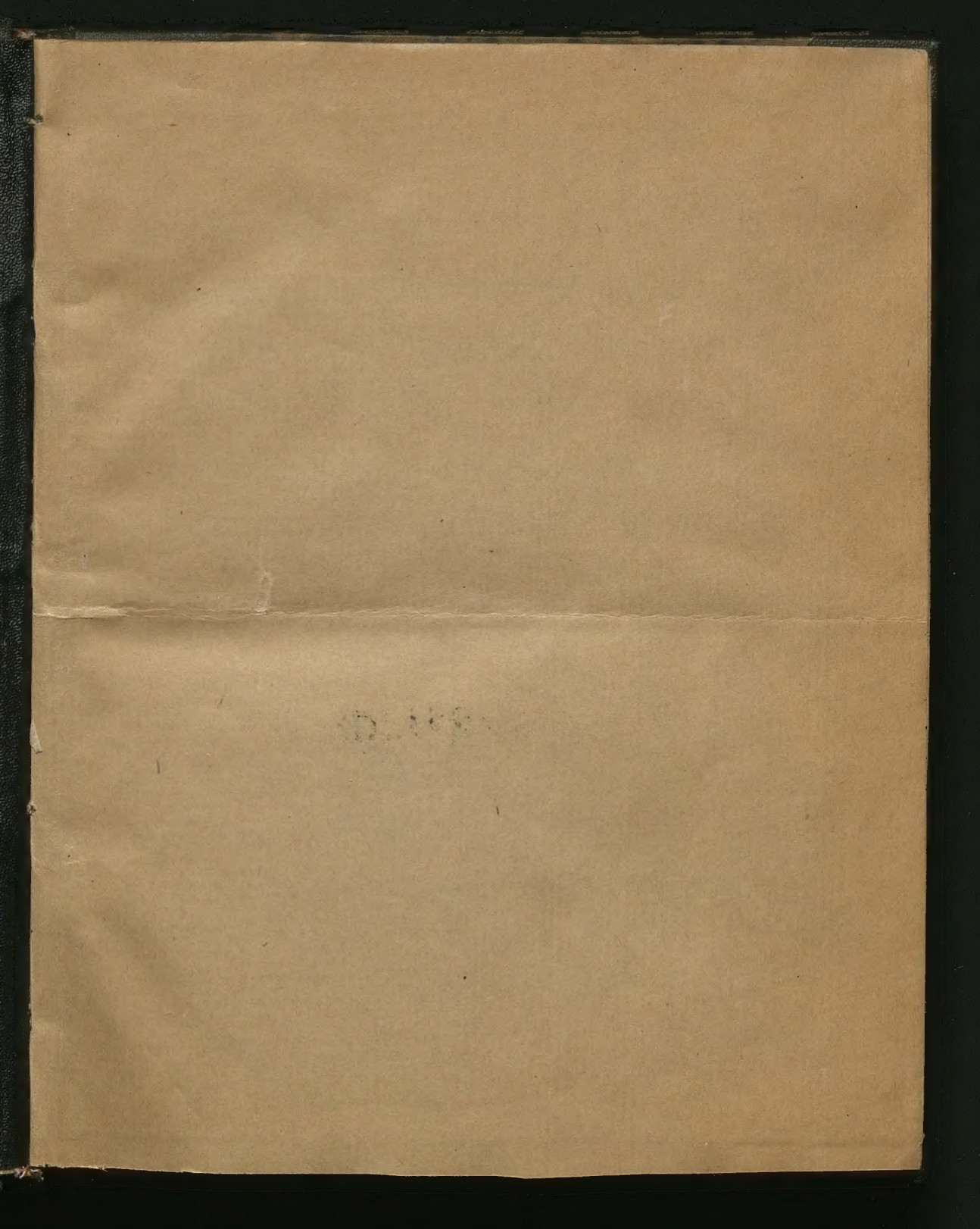
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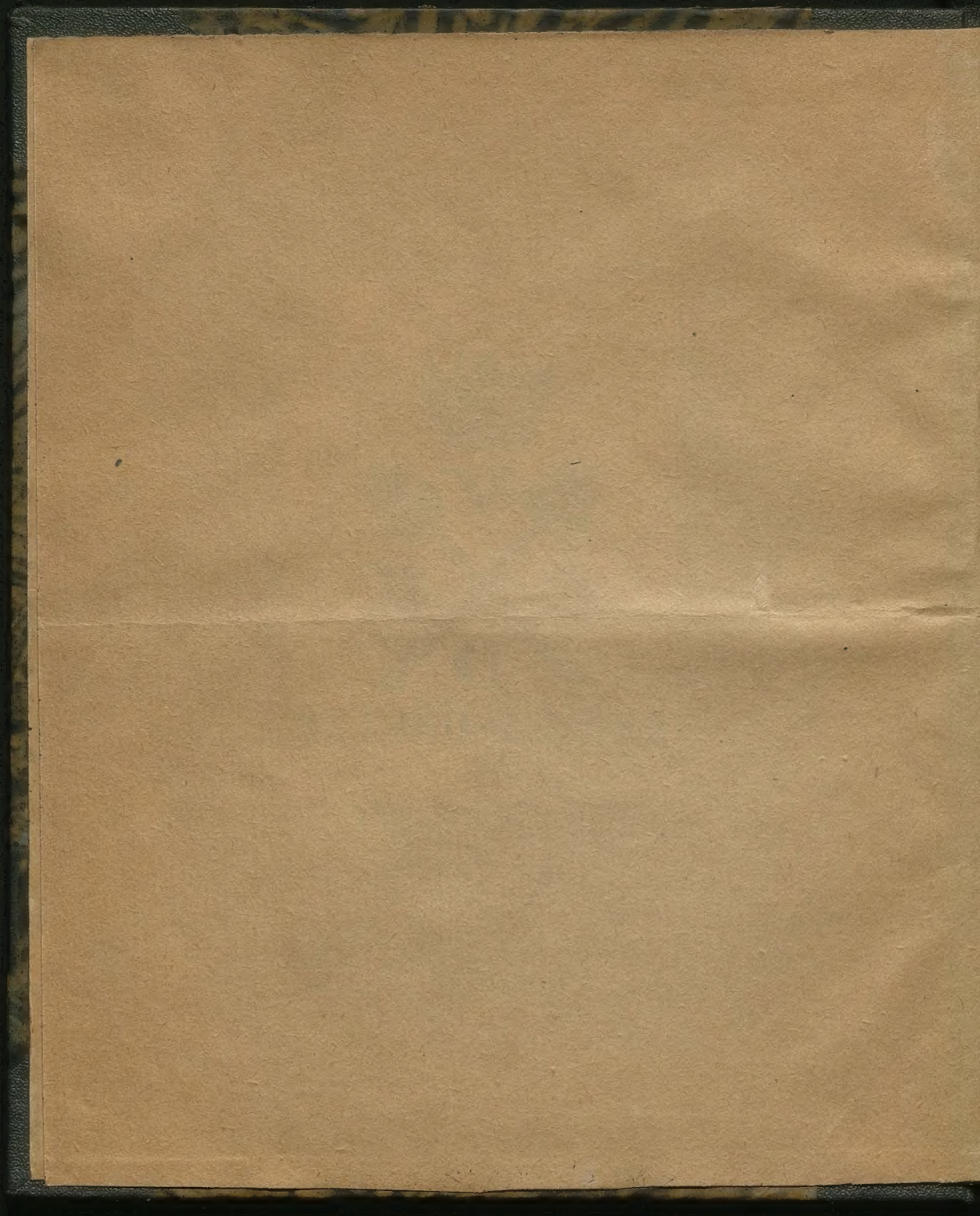
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I





REFUTATIO

Objectionum contra utramquè Appendicem ad
perfectam circuli quadraturam à Cl. Professore F.
germanicè scriptarum, & novis Göttingensibus
rem literariam concernentibus 4ta Februarii Anni
volventis 1775. insertarum.

221961

Imo. **E**TH dudum scio, duas quantitates esse æquales, si demonstra-
ri potest, nullam differentiam inter eas esse assignabilem, &
aliud esse in Geometria demonstrare, aliud cernere oculis corporeis;
nihilominus tamen Cl. F. gratias ago, quantas debeo, quod pro huma-
nitate sua veritatum harum memoriam mihi renovare sit dignatus.
Longe majores adhuc ipsi agerem, si perutili aliàs hac instructio-
ne opportuniùs inclarescere laborasset. Experimenta capiuntur beneficio
sensuum, quibus nullatenus omnis certitudo abjudicari potest: præser-
tim visui, si reflexione, refractione, distantia aut aliò obstaculo non tur-
betur. Observatio de qua in appendice 1ma agitur, ritè & sine hu-
jusmodi impedimento fuit instituta: hinc veritas ejus in dubium vo-
cari nequit. Corollarium unum fuit ex propositione: *Circuli sunt in*
ratione duplicata diametrorum; 2dum autem deductum est ex 1mo:
unde censura Cl. F. fuit supervacanea; id quod intellectis iis, quæ
sequuntur, magis patefiet.

2do. Ex diametris 7, & 9 ulnarum invenit Cl. F. per rationem
10000: 31415, peripherias 21, 9911; & 28, 2743 ulnarum; cum
tamen vi ejusdem solum 21, 9905; & 28, 2735 ulnarum esse queant:
quare complementum prioris ad 22 ulnas non sunt 0, 192; sed 0, 228
digiti, & posterior periphæria continet præter 28 ulnas non 6, 58; sed
6, 564 digit. Et per hunc dupliciter erroneum calculum Cl. F. pro-
bare conatur dimensiones meas esse falsissimas. Ex adverbis *præterpro-*
pter, & *fere* colligere potuisset, quod ego ipsemet illas non tam accu-
ratas esse existimem: non obstante tamen eo vel ex calculo Cl. F. le-
gitimè inferitur periphæriam esse diametri triplam cum minori quam
 $\frac{2}{7}$, & majori quam $\frac{1}{3}$ parte ejusdem: si enim periphæriæ essent præcisè
22, & 28 ulnarum; esset prior accuratè diametri tripla cum $\frac{2}{7}$, & po-
sterior ejusdem tripla cum $\frac{1}{3}$; sed prior continet paulò minus, & po-
sterior

Anterior plus: ergo &c. Quoniam itaque hoc Corollarium est fatentibus omnibus Geometris verò verius; evidens est, etiam Theorema ei superstructum: *Peripheria est diametri tripla cum $\frac{1}{8}$, esse verum.*

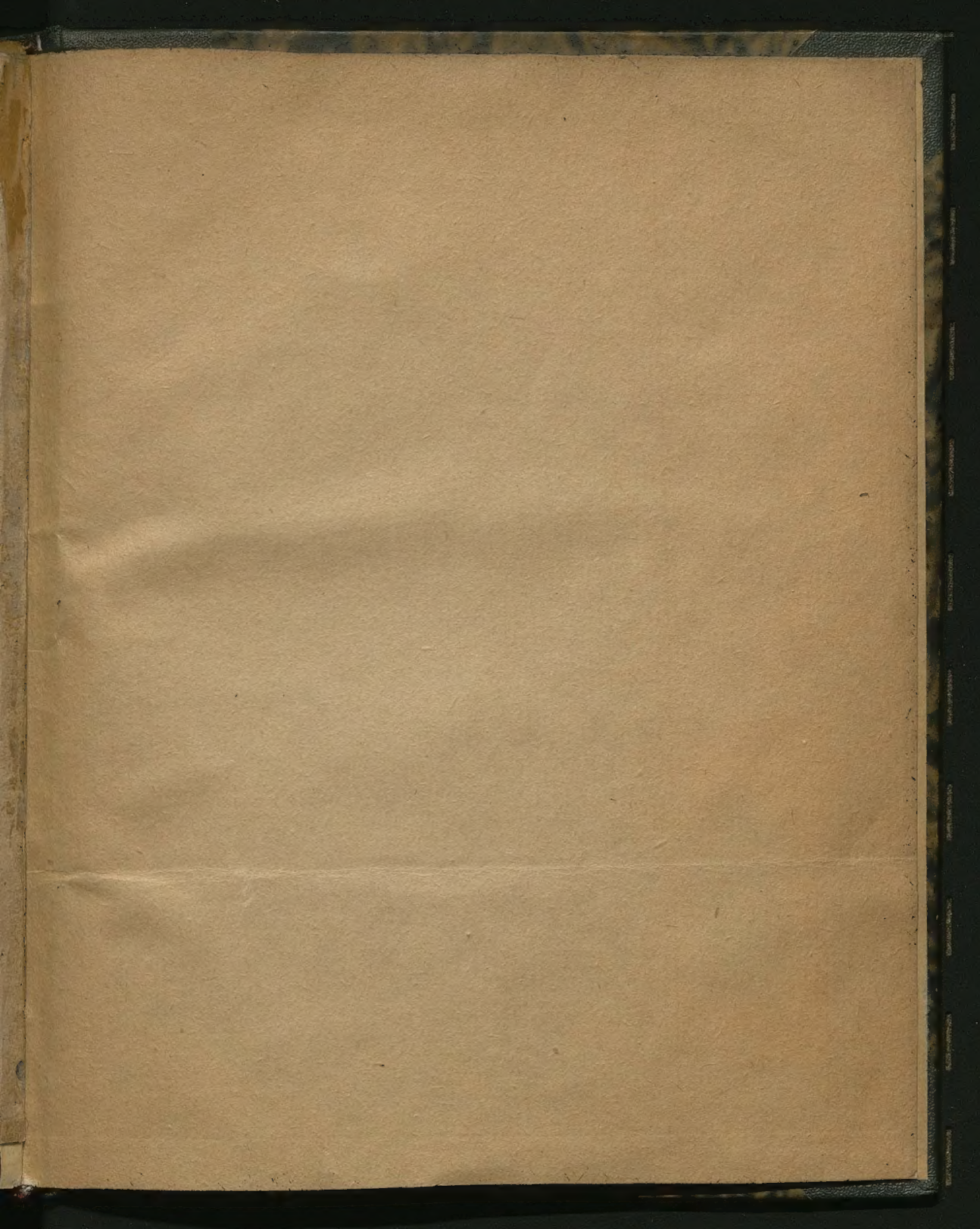
1^{mo}. Cl. F. inquit: *positis ratione diametri ad peripheriam* $= 1 :$
 p , & *radio circuli* $= a$, facile reperitur *segmentum* $= \frac{1}{2} aa$. ($\frac{1}{2} p - 1$)
hæc formula verò non utitur Auctor, sed per alium calculum literalem
demonstrat propositionem per se veram, segmenta duorum circularum
esse in ratione quadratorum diametrorum. Debuisset addere & *Lunula-*
rum. Hæc formula Cl. F. probabiliter indicare voluit, quomodo in-
 vestigatio quadraturæ circuli sit instituenda, & quales progressus in ea
 jam sint facti; quod utrumquæ ego pronuntiantia ipso ignoro. Quidni
 adduxit potius ex calculo integrali formulam summi Newtonii: $1 - \frac{1}{2} +$
 $\frac{1}{4} - \frac{1}{8} + \frac{1}{16} - \frac{1}{32} + \frac{1}{64} - \frac{1}{128} + \frac{1}{256} - \frac{1}{512} + \frac{1}{1024} - \frac{1}{2048} + \frac{1}{4096} - \frac{1}{8192} + \frac{1}{16384} - \frac{1}{32768} + \frac{1}{65536} - \frac{1}{131072} + \frac{1}{262144} - \frac{1}{524288} + \frac{1}{1048576} - \frac{1}{2097152} + \frac{1}{4194304} - \frac{1}{8388608} + \frac{1}{16777216} - \frac{1}{33554432} + \frac{1}{67108864} - \frac{1}{134217728} + \frac{1}{268435456} - \frac{1}{536870912} + \frac{1}{1073741824} - \frac{1}{2147483648} + \frac{1}{4294967296} - \frac{1}{8589934592} + \frac{1}{17179869184} - \frac{1}{34359738368} + \frac{1}{68719476736} - \frac{1}{137438953472} + \frac{1}{274877906944} - \frac{1}{549755813888} + \frac{1}{1099511627776} - \frac{1}{2199023255552} + \frac{1}{4398046511104} - \frac{1}{8796093022208} + \frac{1}{17592186044416} - \frac{1}{35184372088832} + \frac{1}{70368744177664} - \frac{1}{140737488355328} + \frac{1}{281474976710656} - \frac{1}{562949953421312} + \frac{1}{1125899906842624} - \frac{1}{2251799813685248} + \frac{1}{4503599627370496} - \frac{1}{9007199254740992} + \frac{1}{18014398509481984} - \frac{1}{36028797018963968} + \frac{1}{72057594037927936} - \frac{1}{144115188075855872} + \frac{1}{288230376151711744} - \frac{1}{576460752303423488} + \frac{1}{1152921504606846976} - \frac{1}{2305843009213693952} + \frac{1}{4611686018427387904} - \frac{1}{9223372036854775808} + \frac{1}{18446744073709551616} - \frac{1}{36893488147419103232} + \frac{1}{73786976294838206464} - \frac{1}{147573952589676412928} + \frac{1}{295147905179352825856} - \frac{1}{590295810358705651712} + \frac{1}{1180591620717411303424} - \frac{1}{2361183241434822606848} + \frac{1}{4722366482869645213696} - \frac{1}{9444732965739290427392} + \frac{1}{18889465931478580854784} - \frac{1}{37778931862957161709568} + \frac{1}{75557863725914323419136} - \frac{1}{151115727451828646838272} + \frac{1}{302231454903657293676544} - \frac{1}{604462909807314587353088} + \frac{1}{1208925819614629174706176} - \frac{1}{2417851639229258349412352} + \frac{1}{4835703278458516698824704} - \frac{1}{9671406556917033397649408} + \frac{1}{19342813113834066795298816} - \frac{1}{38685626227668133590597632} + \frac{1}{77371252455336267181195264} - \frac{1}{154742504910672534362390528} + \frac{1}{309485009821345068724781056} - \frac{1}{618970019642690137449562112} + \frac{1}{1237940039285380274899124224} - \frac{1}{2475880078570760549798248448} + \frac{1}{4951760157141521099596496896} - \frac{1}{9903520314283042199192993792} + \frac{1}{19807040628566084398385987584} - \frac{1}{39614081257132168796771975168} + \frac{1}{79228162514264337593543950336} - \frac{1}{158456325028528675187087900672} + \frac{1}{316912650057057350374175801344} - \frac{1}{633825300114114700748351602688} + \frac{1}{1267650600228229401496703205376} - \frac{1}{2535301200456458802993406410752} + \frac{1}{5070602400912917605986812821504} - \frac{1}{10141204801825835211973625643008} + \frac{1}{20282409603651670423947251286016} - \frac{1}{40564819207303340847894502572032} + \frac{1}{81129638414606681695789005144064} - \frac{1}{162259276829213363391578010288128} + \frac{1}{324518553658426726783156020576256} - \frac{1}{649037107316853453566312041152512} + \frac{1}{1298074214633706907132624082305024} - \frac{1}{2596148429267413814265248164610048} + \frac{1}{5192296858534827628530496329220096} - \frac{1}{10384593717069655257060992658440192} + \frac{1}{20769187434139310514121985316880384} - \frac{1}{41538374868278621028243970633760768} + \frac{1}{83076749736557242056487941267521536} - \frac{1}{166153499473114484112975882535043072} + \frac{1}{332306998946228968225951765070086144} - \frac{1}{664613997892457936451903530140172288} + \frac{1}{1329227995784915872903807060280344576} - \frac{1}{2658455991569831745807614120560689152} + \frac{1}{5316911983139663491615228241121378304} - \frac{1}{10633823966279326983230456482242756608} + \frac{1}{21267647932558653966460912964485513216} - \frac{1}{42535295865117307932921825928971026432} + \frac{1}{85070591730234615865843651857942052864} - \frac{1}{170141183460469231731687303715884105728} + \frac{1}{340282366920938463463374607431768211456} - \frac{1}{680564733841876926926749214863536422912} + \frac{1}{1361129467683753853853498429727072845824} - \frac{1}{2722258935367507707706996859454145691648} + \frac{1}{5444517870735015415413993718908291383296} - \frac{1}{10889035741470030830827987437816582766592} + \frac{1}{21778071482940061661655974875633165533184} - \frac{1}{43556142965880123323311949751266331066368} + \frac{1}{$

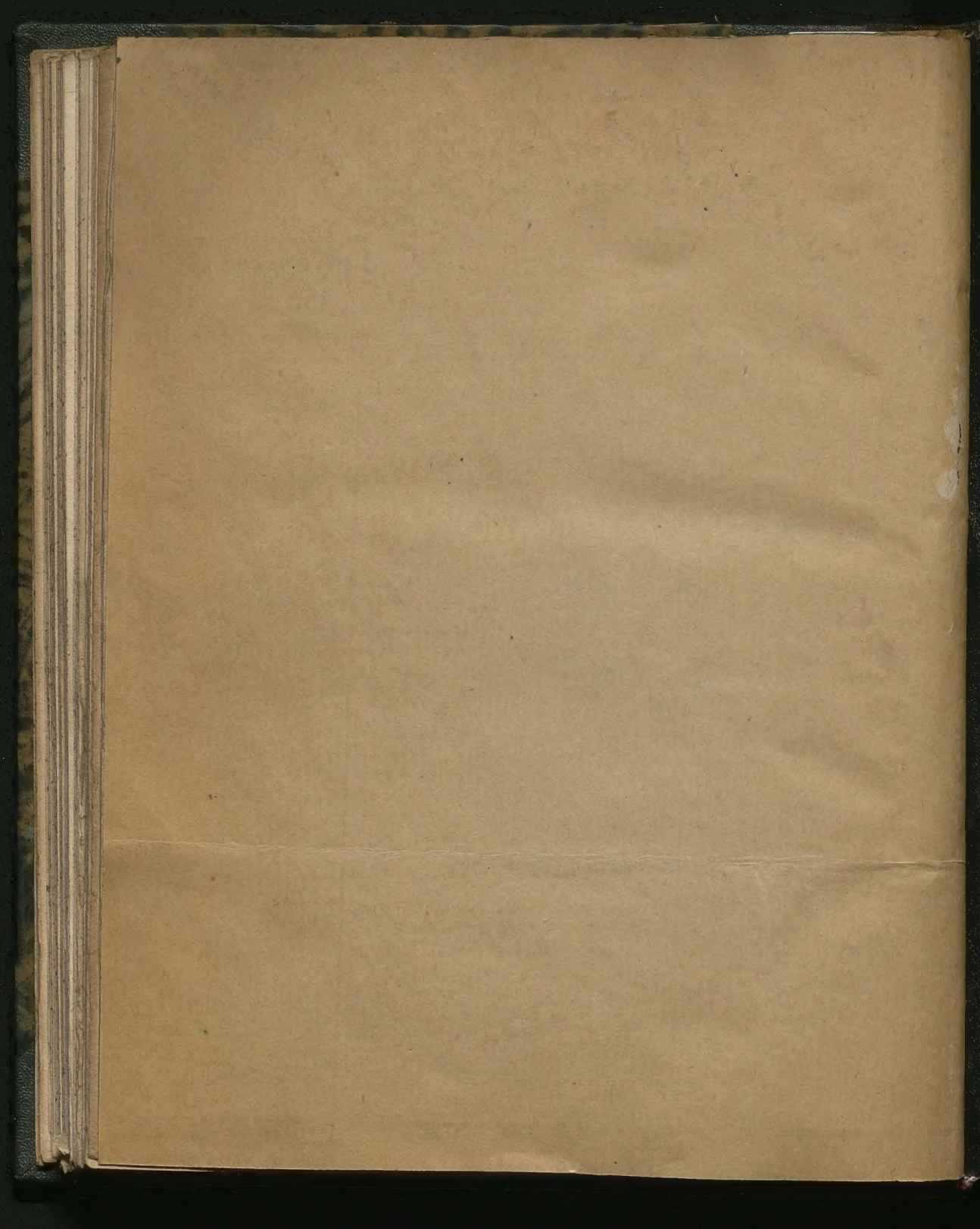
go segmentum verum nequit esse aliud nisi $\frac{4}{11} = \frac{2}{5}$ sicut superius. Ita etiam posita diametro 2, segmentum excessivum est $\frac{4}{7}$ & defectivum $\frac{5}{7}$: fractio priori $\frac{4}{11}$ est $\frac{4}{11}$; minor verò posteriore $\frac{4}{11}$. Ergo segmentum verum est $\frac{4}{11} = \frac{2}{5}$, sicut ibidem. Si Cl. F. solutionem hujus puncti, in quo cardo rei vertitur, cum *Methodo demonstrativa perfecte quadrandi circulum* (cujus censuram hucusquè frustra expectavi) contulerit; impossibile est, quin de perfecta circuli quadratura inventa penitus convincatur, ad quam demonstrandam omnia tam mirè conspirant.

4to. Cl. F. miratur, quod propositionem fluentem ex ratione segmenti ad Lunulam non expresserim numeris, nempe quod circulus sit $\frac{2}{3}$ quadrati diametri. At non opus erat in Appendice repetere, quod in opusculo ipso demonstratum fuit nempe: Circulum esse ad quadratum diametri ut 50: 64. h. e. eum esse $\frac{5}{8}$ quadrati diametri $\frac{5}{8}$, quam expressionem præfero priori, quia facilius est, multiplicare & dividere per 50. quàm per 25.

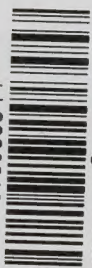
5to. Cl. F. inquit, quod ratio diametri ad peripheriam 1: $\frac{3}{2}$ jam in partibus centesimis sit intolerabiliter falsa, siquidem ita inferit: 1: $\frac{3}{2} = 100: 312\frac{1}{2}$. Si attentius calculum inivisset; invenisset 4tum numerum proportionalem 312 $\frac{1}{2}$. At qualis differentia stupenda est, quæso, inter 312 $\frac{1}{2}$, & 3125! Hæc inadvertentia reddit profectò rationem veram in particulis centesimis intolerabiliter falsam.

Quod superest, Cl. F. rogo, ne refutationem hanc ex amore veritatis profectam in malam partem interpretetur, nequè se petiitum esse Epilogò præfatæ methodi arbitretur, quippe quæ prius in lucem prodiiit, quàm objectiones ejus mihi innotuerunt. Scio, quantum debetur literatis alicujus notæ, & præsertim Professoribus Academicarum præclaris animi dotibus supra communem mortaliùm sortem evectis, quos omni, qua par est, colo observantiâ. Scripsi unicè contra cavillatorem, qui variis affectibus correptus carpit, aliorumquè risui exponit, quidquid captum ejus superare videtur. Discat Scioppius ille ex admonitione salutari sibi data sapere: turpe est Epimetheum esse velle Prometheum, similemquè Scorpioni, cujus cauda semper est in idu. Jam nunc ad Vos, Viri Excellentissimi, Luminaria totius Reipublicæ literariæ provoco, ad Vos, inquam, quibus nihil est antiquius, quàm scientias humano generi tam utiles indefessò studiò propagare, & aliorum inventa in lucem veritatis proferre: favete causam meam ad animi examinare trutinam, æquumque de ea ferre judicium. Pretus humanitate vestra singulari confido, Vos precibus meis locum daturus, unaquè fore perfructuosos, susceptò modicò hoc labore ad gloriam, quam Vobis peperistis, ingens accessurum esse incrementum, & maximum ad immortalia vestra in rem literariam merita cumulum.





Biblioteka Jagiellońska



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